

**QUALITY CONTROL REPORTS FOR  
SEMI DENSE BITUMINOUS CONCRETE**



# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

**NABL** - Accredited Laboratory as per ISO / IEC-17025 : 2005



Job No.: CTCE/BBMP/W.No.17/KS/SDBC(QB)/2014-15

05.05.2014

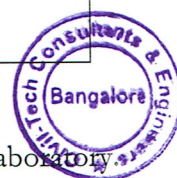
## TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

|                    |   |                                                                                                            |
|--------------------|---|------------------------------------------------------------------------------------------------------------|
| CLIENT             | : | Asst. Executive Engineer, Yeshwanthapura Sub Division, BBMP, Bangalore.                                    |
| AGENCY             | : | Mr. K. Shivakumar, Contractor, Bangalore.                                                                  |
| NAME OF THE WORK   | : | Providing and laying HDPE Water line in Muthyalanagara Block - 3 in J P Park, Ward No.17, BBMP, Bangalore. |
| REFERENCE          | : | EE/RRND/Wo.No./236/2013-14 Dated: 07.02.2014                                                               |
| SOURCE OF LOCATION | : | Hot mix Plant, Bangalore                                                                                   |
| DATE OF TESTING    | : | 05.05.2014                                                                                                 |



The results of the tests conducted on the bitumen sample.

| Sl. No | Description                   | Test Method as per IS    | Test Result | Requirement as per IS:73:2013 |
|--------|-------------------------------|--------------------------|-------------|-------------------------------|
| 1      | Penetration at 25 °C, 1/10 mm | IS :1203 -1978 (RA-2009) | 64          | 60 to 70                      |
| 2      | Softening point, °C           | IS :1205 -1978 (RA-2009) | 48          | Min. 45                       |
| 3      | Ductility at 27°C, cm         | IS :1208 -1978 (RA-2009) | 100 >       | Min. 50                       |
| 4      | Flash Point, °C               | IS :1209 -1978 (RA-2009) | 296         | Min. 220                      |



### Note:

- ⇒ This test report shall not be reproduced except in full, without written approval of the laboratory.
- ⇒ The results indicated above are based on the tests carried out on the samples received in the laboratory.
- ⇒ Any Query regarding the report must be reported within 30 days from the date of testing.

**M/s. Civil-Tech Consultants & Engineers**  
# 23/14, 7th Cross, 3rd Stage,  
4th Block, Shakthiganapathinagara,  
Basaveshwaranagar,  
Bangalore-560079.

*(Handwritten signature)*

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : [www.civiltechconsultants.com](http://www.civiltechconsultants.com)

E-mail : [vishwanath.ia@civiltechconsultants.com](mailto:vishwanath.ia@civiltechconsultants.com) / [info@civiltechconsultants.com](mailto:info@civiltechconsultants.com)



# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

**NABL** - Accredited Laboratory as per ISO / IEC-17025 : 2005



Job No.: CTCE/BBMP/W.No.17/KS/SDBC/AIV/2014-15

05.05.2014

## Aggregate Impact Value

IS: 2386 Part IV

|                   |                                                                                                            |
|-------------------|------------------------------------------------------------------------------------------------------------|
| Client            | Asst. Executive Engineer, Yeshwanthapura Sub Division, BBMP, Bangalore.                                    |
| Agency            | Mr. K. Shivakumar, Contractor, Bangalore.                                                                  |
| Name of the Work  | Providing and laying HDPE Water line in Muthyalanagara Block - 3 in J P Park, Ward No.17, BBMP, Bangalore. |
| Reference         | EE/RRND/Wo.No/236/2013-14 Dated: 07.02.2014                                                                |
| Source / Location | Hot Mix Plant, Bangalore                                                                                   |
| Type of Mix       | Semi Dense Bituminous Concrete                                                                             |
| Date of Testing   | 05.05.2014                                                                                                 |



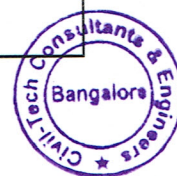
| Sl No. | Details                                                                    | Trial No. |       | Average |
|--------|----------------------------------------------------------------------------|-----------|-------|---------|
|        |                                                                            | 1         | 2     |         |
| 1      | Total weight of aggregate sample filling the cylindrical measure = $W_1$ g | 389       | 392   | 22.41   |
| 2      | Weight of aggregate passing 2.36 mm sieve after the test = $W_2$ g         | 87        | 88    |         |
| 3      | Weight of aggregate retained 2.36 mm sieve after the test = $W_3$ g        | 302       | 304   |         |
| 4      | Aggregate Impact value = percent fines<br>$100 * (W_2/W_1)\%$              | 22.37     | 22.45 |         |

### Comments:

→ Maximum allowable Aggregate Impact value for Semi Dense Bituminous Concrete is 27%

### Note:

- Ⓐ This test report should not be reproduced except in full, without written approval of the laboratory
- Ⓐ The results indicated above are based on the tests carried out on the samples received in the laboratory
- Ⓐ Any Query regarding the report must be reported within 30 days from the date of testing.



**M/s. Civil-Tech Consultants & Engineers**

# 23/14, 7th Cross, 3rd Stage,  
4th Block, Shakthiganapathinagara,  
Basaveshwaranagar,  
Bangalore-560079.

*Vishwanath*

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : [www.civiltechconsultants.com](http://www.civiltechconsultants.com)

E-mail : [vishwanath.ia@civiltechconsultants.com](mailto:vishwanath.ia@civiltechconsultants.com) / [info@civiltechconsultants.com](mailto:info@civiltechconsultants.com)



# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

**NABL** - Accredited Laboratory as per ISO / IEC-17025 : 2005



Job No.: CTCE/BBMP/W.No.17/KS/SDBC/Shape\_T/2014-15

: 05.05.2014

## DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

|                     |                                                                                                              |
|---------------------|--------------------------------------------------------------------------------------------------------------|
| Client              | : Asst. Executive Engineer, Yeshwanthapura Sub Division, BBMP, Bangalore.                                    |
| Agency              | : Mr. K. Shivakumar, Contractor, Bangalore.                                                                  |
| Name of Work        | : Providing and laying HDPE Water line in Muthyalanagara Block - 3 in J P Park, Ward No.17, BBMP, Bangalore. |
| Reference           | : EE/RRND/Wo.No/236/2013-14 Dated: 07.02.2014                                                                |
| Technical Reference | : IS 2386(Part 1) 1963 (RA 2007)                                                                             |
| Type of Mix         | : Semi Dense Bituminous Concrete                                                                             |
| Date of Testing     | : 05.05.2014                                                                                                 |



Result : Flakiness Index = **12.32%**

Elongation Index = **13.10%**

Result : Combined Flakiness & Elongation index **25.42%**

Comments:

Maximum allowable Flakiness & Elongation Index for Semi Dense Bituminous Concrete is 30%

### Note:

- Ⓟ This test report should not be reproduced except in full, without written approval of the laboratory
- Ⓟ The results indicated above are based on the tests carried out on the samples collected by the laboratory
- Ⓟ Any Query regarding the report must be reported within 30 days from the date of testing

  
**M/s. Civil-Tech Consultants & Engineers**  
# 23/14, 7th Cross, 3rd Stage,  
4th Block, Shakti Ganapathinagara,  
Basaveshwaranagar,  
Bangalore-560079.



#23/14, 7th Cross, 3rd Stage, 4th Block, Shakti Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.

Tele Fax : 23223227, Website : [www.civiltechconsultants.com](http://www.civiltechconsultants.com)

E-mail : [vishwanath.ia@civiltechconsultants.com](mailto:vishwanath.ia@civiltechconsultants.com) / [info@civiltechconsultants.com](mailto:info@civiltechconsultants.com)